Quercetin in Food: Possible Mechanisms of ItsEffect on Memory

Fatemeh Babaei, Mohammadreza Mirzababaei, and Marjan Nassiri-Asl

Abstract:Quercetin (3,3′,4′,5,7-pentahydroxyflavone) is found in vegetables and fruits. It is one of the major flavonoidsthat is part of human diets. Quercetin has several pharmacological effects in the nervous system as a neuroprotective agent.In this review, we summarize the research on quercetin and its role in memory in both animals and humans. Articleswere chosen from the Scopus, PubMed, and Web of Science databases. In this review, we describe and summarize theimportance of quercetin's presence in the body, particularly in the brain; its kinetics, including its absorption, metabolism,distribution, and excretion; its behavioral effects; and some of the possible mechanisms of action of quercetin on memoryin different animal models. Several important pathways that may be involved in the processes of learning and memory,long-term potentiation, and cognition may be impaired during neurological diseases or other medical conditions. Asdietary quercetin is important, provision of its best formulation for delivery to the brain as a nutraceutical and in clinicaltranslational research for the prevention or treatment of Alzheimer's disease and other types of dementia is necessary.

Keywords:Alzheimer's disease, flavonoids, food, memory, quercetin

JFDS-2018-0273 Submitted 2/3/2018,
Accepted 11/7/2018.
Author Babaei iswith Dept. of Clinical Biochemistry, Qazvin Univ. of Medical Sciences, Qazvin,Iran. Author Mirzababaei is with Dept. of Clinical Biochemistry, Faculty of Medi-cal Sciences, Tarbiat Modares Univ., 14115-111, Tehran, Iran. Author Nassiri-Aslis with Cellular and Molecular Research Center, Qazvin Univ. of Medical Sciences,341197-5981, Qazvin, Iran.
Direct inquires to author Nassiri-Asl (E-mail: marjan-nassiriaslm@gmail.com)